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ABSTRACT

This review of research points out how storybooks may affect a variety of children's behaviors, including language, achievement, and pedestrian skills. Additionally, ways that children's comprehension of storybook material may be increased are indicated. Directions for future research and practice are suggested. (Author/RH)

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Can Storybooks Really Change Behavior?

by

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ABSTRACT

Can children's storybooks change children's behavior? Can storybooks be altered to produce greater effects? These are questions answered in this paper.

Reviewing his work and that of others, the author notes how storybooks have affected a variety of children's behaviors, including language, achievement, and pedestrian skills. Drawing on other recent research, he points out some ways that children's comprehension of storybook material may be increased. He concludes the paper with suggestions for future research and practice.

Examine a storybook belonging to a young child. It may be small or large, but it will not be long--only a few hundred words. Usually, it will be illustrated, sometimes with lavish drawings. Its prose may be childish or poetic, with plots ranging from silly to serious. Will that storybook entertain a child? Probably. Will that storybook change a child's behavior? Possibly, as I intend to show.

The idea that children's books might change their behavior is not new. Recall the comic book, the bane of English teachers. Thirty years ago, parents, Reader's Digest, and assorted worthies (including some academics) thought comic books would rot the minds of children. Some people moved to prohibit them, and one State prohibited their sale. Kids went underground, or, more correctly, undercover; they read comics in bed with a blanket overhead and a flashlight. There was no research on comic books, but there were Congressional hearings. An idea emerged, however; books might affect the behavior of children directly.

Few preschool-age children can read, though they love to listen. Bedtime stories and storytime at the library or nursery school are favorite activities. In the 1930s, picture books emerged as a product aimed at the young child; such books now fill children's libraries, nursery schools, grocery stores, and homes. Most of these books are meant to delight children, a few to instruct. Of the ones designed to teach, most focus on academic skills, namely alphabet recognition,

object-numeral correspondence, or certain qualitative or quantitative concepts. Recently, some storybooks have been marketed to teach children new behaviors (toileting) or to strengthen old behaviors (eating vegetables). This recent development, a behavior-change genre of storybooks, piques my interest and may pique the interest of other educators, therapists, and researchers.

The possibility that storybooks might be useful in changing children's behavior is attractive. Storybooks are cheap, familiar to both adults and children, and easy to use. Almost nothing could be simpler than reading a story to a child, and one can imagine many things that a storybook might be used to teach. The possibility is intriguing, but is it realistic?

Storybooks obviously involve language, and the first tests of the effects of storybooks involved language development. In 1960, Irwin reported that toddlers who heard their mothers read a new storybook every week for 17 months improved their frequency of spontaneous phonemes by 30 percent compared to toddlers who did not hear storybooks. All the toddlers were from blue-collar families. Boroughs systematically replicated these findings with disadvantaged preschoolers and different measures. She reports that three months of storybook reading resulted in a five-point increase on the Stanford-Binet, a nine-point increase on the Peabody Picture Vocabulary Test, and significant changes on several measures of expressive language. While ambiguities about the experimental procedures

muddy certain conclusions, these two studies support Ernst Moerk's (1977) conclusion that storybooks can be used effectively by mothers in teaching language, and they give experimental support to the inclusion of the number of storybooks as an item in the Caldwell Home Inventory.

Neither parents, teachers, nor researchers are likely to be surprised that storybooks can affect childen's language, but the effects of storybooks on other behavior may evoke surprise. Consider, therefore, the demonstrations of the effects of storybooks on children's behavior.

Achievement connotes the classification of children. A child is said to *over*achieve, another to *under*achieve. Sometimes, the word is used to stereotype: certain ethnic groups are said to be more achievement *motivated*. One asks: How can achievement be induced?

Possibly, speculate McArthur and Eisen, through children's literature. In 1976, they reported the results of a study in which the sex and the "achievement" of a storybook character were varied. After exposing preschoolers to a storybook, the children were invited to put some plastic flowers inside a bottle--a task resembling the one depicted in the storybooks. In general, they reported that the storybooks modeling the task affected children's persistence (or achievement, if you will). In the case of boys, their performance was enhanced if a male was shown achieving but depressed if a boy was shown as passive or dependent. The same was true for girls shown a female character, but much less so. The study suggests that storybooks can induce

achievement.

When confronted with a problem requiring a solution, a child may attempt to overcome the problem (achievement), do nothing, or ask someone else to help (dependency). As achievement may be modeled and copied, so may dependency. Indeed, Fischer and Torner (1976) conducted an experiment with preschoolers who asked for help on solving a puzzle much quicker if shown stories modeling dependency.

These two studies are particularly interesting from a sociological view. The authors of both papers argue that children's stories teach stereotypic behavior, particularly sex-linked roles. The results of both suggest that children's books are effective in teaching such behaviors. Concerned teachers and parents may, therefore, wish to screen stories for children for "hidden persuaders."

Compiling lists of "proscribed books" does not excite me. Rather, the demonstration of the effects of storybooks excites me with the possibility that storybooks might be created to teach as well as to entertain. Prescribing stories for children seems more fetching.

Not long ago, my coworkers and I explored this hidden potential of storybooks. In addition to an interest in children's storybooks, I have become a student of a particular problem of industrialized nations: pedestrian accidents involving young children. Such accidents are the second leading cause of death in the United States for children between the ages of 2 to 4 (Vital Statistics, 1977, 1979). Sadly, however, there are to the best of my knowledge no published experimental studies on pedestrian safety for preschoolers in the

United States, although some work has been done in Europe.

Thus, the two interests merged, storybooks and pedestrian safety. A demonstration that children's books could affect the safety-related behaviors of children represented an unusual opportunity for interesting social science and ameliorating a serious problem.

"Stop at the Curb. Look left, look right, and look left again." Have you heard that before? These imperatives constitute the folklore about pedestrian safety, a folklore that may endanger the lives of preschoolers. These dictums stress the topography of safe pedestrian behavior. The functional aspects of pedestrian behaviors, however, are more important. A person engages in the behaviors in order to judge the safety of entering the street (namely, little or no possibility of being struck by a vehicle). A review of literature on accidents involving preschool-age pedestrians and on the developmental skills related to the functional aspects of pedestrian behavior (judging velocity, estimated time of arrival, distance versus relative size) lead me to the conclusion to teach young children to avoid the street rather than to cross it. After choosing to avoid the street as an instructional objective, my associates and I created four storybooks that stressed playing on the grasss or sidewalk. Later, we evaluated the effects of those storybooks on the frequency with which children entered the street.

The four special storybooks shared a number of common features both in structure and content. Note the structural features:

1. The illustrations were colored outline drawings, with a minimum of interior detail and embellishments. Figure 1 is illustrative. The overall style of illustration was chosen, because it reflects children's preference and apparently improves their learning (viz.

Levin, Bender, & Lesgold, 1976; Rudisill, 1952; French, 1952; Stewig, 1975; Loeb, 1964; Travers, 1969; Miller, 1938; and Brooks, 1977).

2. The protagonist was made to appear androgynous, and the name of the listening child was always used as the name of the protagonist.

3. Questions about content appeared at the bottom of most pages.

Though the storyline varied in the books, common themes occurred in all four:

1. Safe behavior was praised or rewarded;

2. Unsafe behavior was consequated either naturally (e.g., a ball getting smashed), socially (i.e., parental use of time out), or both.

Four preschool children heard these storybooks outside of the home (3 in preschool and 1 in a community building). A multiple-baseline design was used to evaluate the effects of the storybooks on the children's rate of entering and duration of play in the street. During both baseline and storybook reading, children were observed playing outdoors near their homes for 25 minutes.

Figure 2 shows the rate per hour that children entered the street, probably more critical than duration of play in the street since most accidents occur just at the time the child enters the street. Figure 2 reveals that 3 of the 4 children had upward trends and that their rate of entry was suppressed temporarily after hearing the storybooks. One of the children, Cal, evidenced a downward trend, which the storybooks may have accelerated. Unfortunately, we could not collect further data on the children because of various illnesses, vacations, the offset of Daylight Savings Time, and the beginning of cold weather. The data in Figure 1 suggest that storybooks might be used to affect the everyday behavior of children.[1]

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[1] A complete write-up of this research is available from The AAA Foundation for Traffic Safety, 8111 Gatehouse Road, Room 328, Falls Church, VA 22042.

Why didn't the stories have a more lasting effect? A number of explanations are possible. In order to show that hearing the storybook per se resulted in the change, a teacher, not the parents, read the books. A parent reading the books might be much more powerful. The natural environment rewards unsafe behavior not safe behavior: (a) the hard surface of the street is a wonderful place to ride wheeled toys; (b) peer modeling and pressure emphasize playing in the street; and (c) parental reprimands (e.g., "Get out of the street, Jimmy") seem to function as positive attention to inappropriate behavior. Some of the structural elements of the storybooks may not have been the best chosen. For example, instead of modeling punishment for unsafe behavior, perhaps it would have been better to stress resistance to temptation, because negative modeling can backfire. Only additional research will tease out these questions. It may be, however, that behaviors other than pedestrian ones are more susceptible to changes wrought by storybooks.

A question apropos to the symposium in which this paper is being presented is whether the structure of storybooks can be altered, thereby making them more effective. Some of our other research indicates an affirmative answer to the question.

In a series of studies, we have been examining the effects of some features of storybooks on comprehension, which seems to mediate the effects of storybooks on behavior. Why did we choose comprehension? Two principal reasons come to mind: (a) McArthur and Eisen (1976) found such a positive relationship in their study on the effects of storybooks on achievement; and (b) Whitehurst (1977) has noted such a relationship in his studies of language, which he calls the

Comprehension-Imitation-Production hypothesis. The hypothesis can be simply stated: One is more likely to imitate that which is comprehended. Can the features of storybooks be changed and change comprehension? Yes.

In one study using a counter-balanced reversal design across six children, we found that the illustrations in commercially-available storybooks typically facilitated comprehension of various parts of speech (subject nouns, direct objects, and active verbs). Figure 3 is a summary graph of those results, showing net percentage changes in comprehension across successive conditions (illustrations versus no illustrations) for each child.[2] Other results from the study suggest that illustrations recruit visual attention and reduce fidgeting, as measured by a 2-second interval code. Using a variety of correlational measures, we did not uncover any significant covariants (e.g., storybook length, number of words per picture, or number of pictures per story).

In another study using a counter-balanced reversal design across four children, we discovered that the substitution of the child's name as the name of the protagonist in commercially-available storybooks resulted in a dramatic improvement in comprehension of various parts of speech, which can be seen in one of the graphs from the study--Figure 4.[3] This phenomenon held true whatever the illustrated character was: boy, girl, man, woman, or animal. What's in a name? A lot, if it's yours and you are a preschooler.

Have we tested these variables yet to see if they really affect any behaviors induced by storybooks? Not yet, but we hope to. If nothing else,

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[2]A complete write up of this research will be available shortly from the Early Childhood Institute, 130 Haworth, The University of Kansas, Lawrence, KS 66045. The report by Embry, D. D., Loebig, R. L., and Baer, D. M. is entitled: "Appealing to the preschooler's eye and ear: An analysis of multiple effects of storybook illustrations.

[3]A complete report of this study will be available in the near future from the Early Childhood Institute (same address).

designing storybooks with more potent comprehension variables seems deductively sensible.

Consider the implications of the research discussed. (a) Storybooks can affect children's behavior unintentionally, as in the case of achievement or dependency. That is, the cultural stereotypes presented in storybooks probably do affect children's behavior. (b) Storybooks can be used explicitly to teach children, as in the case of language or pedestrian safety. These items suggest that storybooks can be used to strengthen or change the behavior of young children, a suggestion with implications for future practice and research:

(a) Curriculum development specialists might improve the effectiveness of packages designed for young children by including specially designed storybooks that model desired behavior.

(b) Therapists may wish to use storybooks as a means of facilitating treatment of behavior problems. Since the therapist typically works with single cases, illustrating a storybook for each case becomes nearly impossible; a better alternative may be Polaroid snapshots or 35 mm. snapshots of the target child--a poor person's version of Dowrick's (1980) self-modeling video tapes.

(c) Teachers and parents should scan storybooks for "hidden persuaders" which might be harmful or helpful to the development of the child.

(d) Some researchers may desire to pursue an interesting line of research, by discovering the ways in which storybooks affect children's behavior.

I invite, you, now, to reexamine a storybook belonging to a young child. That book will likely delight and entertain a child; that book may instruct

the child, too. Artistic or literary judgments are no longer the only criterion for the creation of storybooks; storybooks may be created to change children's behavior.

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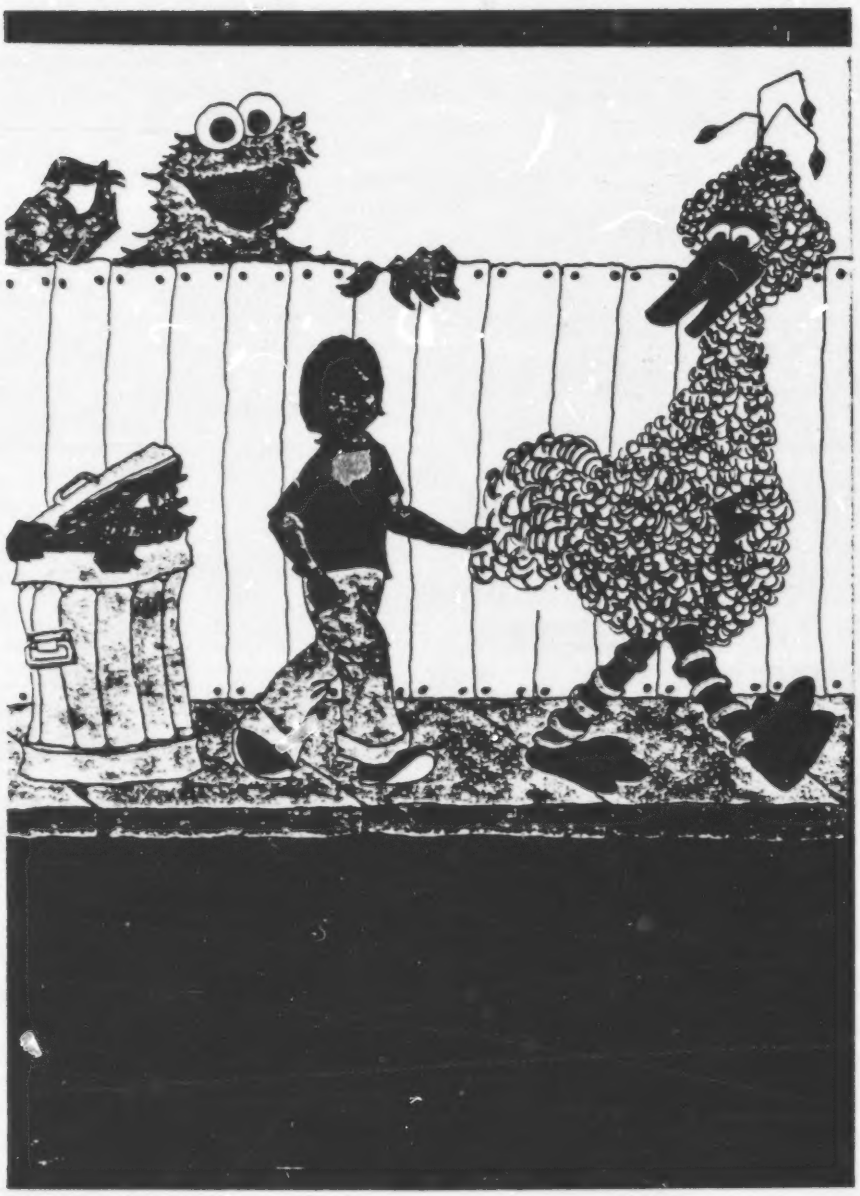
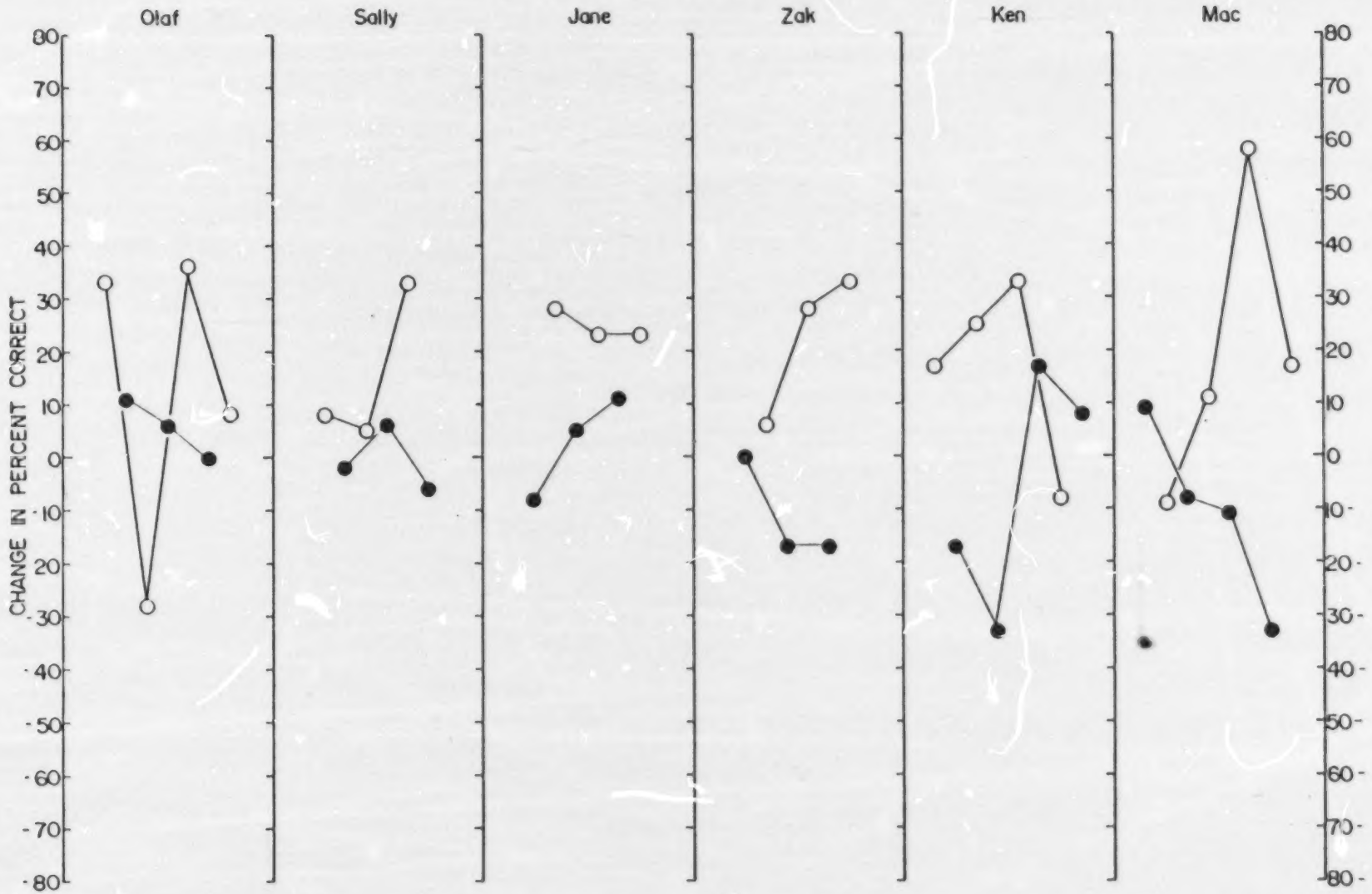
FIGURE 1

SAMPLE STORYBOOK ILLUSTRATION



COMPREHENSION OF ALL PARTS OF SPEECH BY CONDITIONS
EXPRESSED AS CHANGE IN PERCENT CORRECT



●-Non-Illustrated Stories
○-Illustrated Stories

SUCCESSIVE CONDITIONS FOR EACH SUBJECT

Figure 3

FIGURE 2

CHILDREN'S RATE OF ENTERING THE STREET

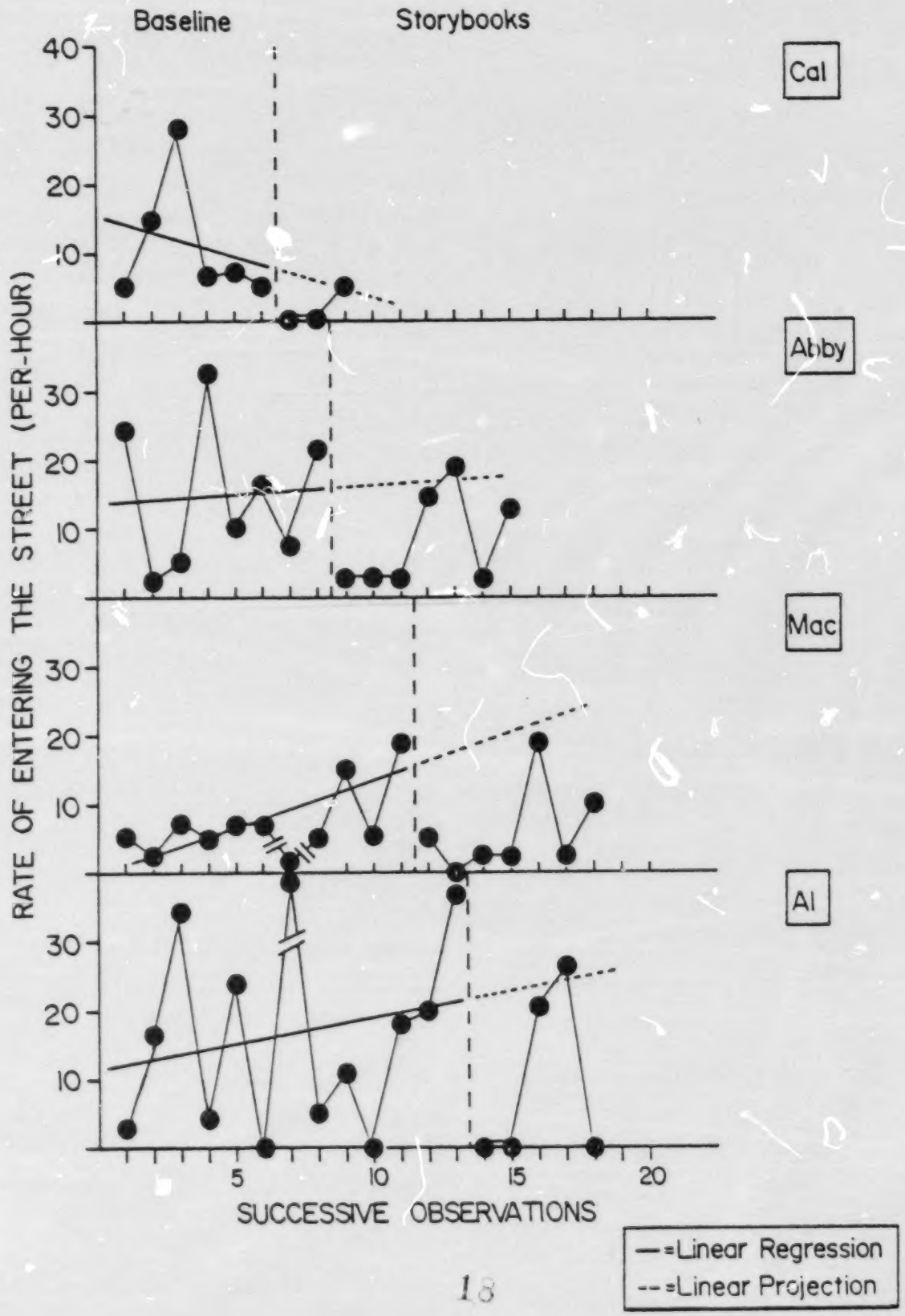


FIGURE 4

COMPREHENSION OF ALL-PARTS OF SPEECH BY CONDITIONS
EXPRESSED AS PERCENT CORRECT